UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

January 21, 2010

VIA U.S. MAIL

Edward Modiano
De Maximis, Inc.
1322 Scott Street
Suite 104
San Diego, CA 92106

Re: Omega Chemical Corporation Superfund Site, Operable Unit 2, Draft RI Report/Proposed FS Alternatives Comment Letter dated October 15, 2009

Dear Mr. Modiano,

This is in response to your October 15, 2009 letter to Kathleen Salyer, in which you presented comments by the Omega Chemical Site PRP Organized Group (OPOG) on the draft Remedial Investigation (RI) report dated March 2009 and the planned Feasibility Study (FS) alternatives for addressing groundwater contamination at Operable Unit 2 (OU2) of the Omega Chemical Corporation Superfund Site. OPOG's comments are re-stated below with EPA's responses.

OPOG's comments on the draft RI report

1. *The RI report assumes that contaminants migrated vertically downward 70 feet from the Omega site immediately when the site opened in 1976. In view of the subsurface stratigraphy, it would probably take several years or more to migrate to that depth.*

   Response: Liquid releases that are sustained at one location can cause saturation of the subsurface soils and accelerate vertical migration of contaminants. Additionally, as OPOG has indicated in the past, there is a suspicion that contamination may have reached the groundwater as a result of contaminated substances being dumped into a monitoring well at the former Omega Chemical property. If such practices were in place during the Omega Chemical, Inc. operations, the contamination could reach groundwater very quickly (i.e., in much less than the "several years" suggested by OPOG).

   Even if the vertical impacts occurred several years after 1976, the contaminants could still have spread over the current extent of OU2 as defined by EPA. Contaminant

migration in OU2 groundwater downgradient of the former Omega Chemical property depends mostly on the effective porosity. The effective porosity is expected to be small for natural alluvial aquifers such as at the Omega site. This smaller effective porosity is conducive to fast contaminant migration in groundwater.

2. *The RI report assumes that there was no retardation or decay of contaminants from the Omega site during the horizontal flow of groundwater. Data within the RI report itself shows such retardation and decay is likely occurring.*

   Response: Contrary to OPOG's assertions, the RI does not assume there is no retardation or decay of contaminants at OU2. The RI shows that although the degradation products of the compounds released at the former Omega property are present in groundwater at OU2, the degradation is minor and the primary contaminants, such as PCE and TCE, persist and migrate away from the property. The RI interpretation is that the degradation of PCE and TCE occurs primarily at the source areas rather than in the groundwater at OU2, as evidenced by the distribution of the primary contaminants and their degradation products.

   Retardation of the contaminants within the sandy aquifers at OU2 is considered negligible. This is evidenced by the similar migration distances for compounds that have varying sorption capacity (e.g., Freon 113, PCE, TCE, Freon 11 - in decreasing order) and compounds that have negligible sorption (e.g., 1,4-Dioxane). It is likely that the fine-grained units at OU2 have a much higher content of organic carbon than the coarse-grained units and consequently sorption within these fine-grained materials would be substantial; however, only the coarse-grained units constitute the major transport pathways for groundwater contamination.

3. *Finally, the RI report assumes that since Freons "persist" throughout the plume, all of the plume must be tied to release of Freons from Omega. EPA itself is still continuing to look for additional Freon sources. The conclusions in the RI, therefore, are at best premature, and are likely inaccurate.*

   Response: The groundwater sampling results indicate that Freon concentrations decrease away from the former Omega property, which is consistent with the property being the source of Freons in groundwater at OU2. Freons are known to be persistent in groundwater, i.e., they do not generally break down to other compounds. Although the investigations to date have not identified another source of Freons at OU2, EPA continues its records searches and if other sources of Freons are identified, they will be investigated. As we have told OPOG representatives on multiple occasions, we will share whatever information EPA obtains on other possible Freon sources with OPOG as soon as it is appropriate to do so, and we would welcome any information on that subject that OPOG itself develops. In the meantime, we believe that the findings and conclusions of the RI report are supported by the available data on sources and concentration gradients.

OPOG's comments on the draft FS alternatives

4. *The proposed FS alternatives inappropriately evaluate only one basic alternative: pump and treat. The FS alternatives do not adequately address source containment and removal alternatives that address contamination closer to source areas. They could constitute, more technically and cost effective approaches to limiting the risks of the plume.*

   Response: As the draft RI report states, the groundwater plume of contaminants from the Omega site extends for more than four miles past the OU1 boundary (i.e., the Phase 1a area). The plume flows underneath a highly developed commercial/industrial area, within which lie several facilities (i.e., sources) where contaminant releases have contributed to groundwater contamination and commingled with the OU2 plume. As we have discussed during our meetings with OPOG on the OU FS, containment of the OU2 plume is the primary Remedial Action Objective (RAO) for the alternatives being developed and evaluated in the OU2 Feasibility Study for an interim remedial action. Based on our evaluation of hydrogeologic conditions and the extent of the plume, we believe that the basic pump and treat approach is the only feasible means to achieve containment of the plume. The alternatives under consideration do include ones that involve groundwater extraction at multiple locations within the plume in order to contain major "hot spots" of contamination closer to their source(s).

   Because the FS is looking at alternatives appropriate for an interim action (containment), it does not incorporate source control actions in those alternatives. EPA certainly recognizes the importance of and need for source control actions, and we have to date focused on source control at the Omega site and at getting the OU1 groundwater containment system up and running. That system finally came on line in July 2009.

   The RI identifies approximately 20 source areas within OU2 where investigation and cleanup actions are being conducted under the oversight of state agencies. EPA expects that the state will enforce source control actions at these facilities as needed, and we are working with the state to ensure the exchange of information and coordination of our efforts as work progresses. It is possible that future EPA response actions for the OU2 plume could include source control actions, but it is premature to include them at this time. In the meantime, there is nothing that precludes implementation of source control actions at the facilities under the state's oversight, and EPA fully supports any such actions that do not interfere with the interim OU2 remedy that we expect to select later this year. Following implementation of the interim remedy, EPA will evaluate the feasibility of plume wide clean up of the contaminated aquifer.

5. *This failure to evaluate different alternatives for feasibility is, in our experience, unprecedented. OPOG strongly believes that the FS fails to consider feasible, appropriate remedy options which, considering the criteria of effectiveness, cost, environmental impact, energy use, flexibility, ease of implementation, and local impacts on the community, are likely to be superior to the one option EPA evaluates.*

   Response: EPA has considered a wide range of both ex-situ and in-situ technologies that could be used to achieve the RAOs established for the FS, but options other than pump and treat were screened out for various reasons. For example:

- In-situ technologies involving biological approaches can be effective and efficient, but were screened out because there are significant implementation and effectiveness issues. Specifically, OU2 consists of a developed area with businesses, busy streets, railways, utility lines, etc., which greatly limit access. The contaminated groundwater is at depths between 100 and 200 feet below ground surface and spans an area of about 4.5 miles long and almost 1 mile wide; these conditions preclude a cost effective means of delivery for chemical supplements needed to make in-situ technologies effective. In addition, the plume includes a mix of contaminants that cannot be destroyed by a single process; some degrade aerobically, some anaerobically, and individual contaminants respond to different supplements.

- In-situ technologies involving chemical, physical and thermal processes were screened out because of the large volume of water and large spatial distribution.

- Reactive permeable barriers were screened out as impractical because of the depth and width of the contaminant plume.

In the context of trying to achieve containment of the OU2 plume, the impacts of implementing in-situ technologies on the community would be higher than the impacts of groundwater extraction and treatment.

Contrary to the assertion in your letter, EPA did not "presumptively assume" that all the alternatives (other than the "no action" alternative) would rely upon groundwater extraction and treatment. After a complete screening of all technologies, groundwater extraction was retained as the only practical means of containing the plume. Four different end uses with a range of treatment technologies are under consideration within the alternatives in the draft FS.

EPA will continue its regular meetings with OPOG regarding the FS, and we have sent the draft FS for your review last week. In the meantime, if you or your client have any technical questions regarding the RI/FS, please contact me at (415) 947-4183. Please direct any legal questions to Steve Berninger, Assistant Regional Counsel, at (415) 972-3909. Sincerely,

Lynda Deschambault

Lynda Deschambault
Remedial Project Manager
Superfund Division

cc: Steve Berninger, USEPA
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